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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/827,238

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Akitomo Ohba

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EXAMINER

LANIER, BENJAMIN E

ART UNIT

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2132

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/827,238	Applicant(s) OHBA, AKITOMO	
	Examiner BENJAMIN E. LANIER	Art Unit 2132	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 1,5,9,12,14 and 17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-4,6-8,10,11,13,15,16 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Species 2 in the reply filed on 08 February 2008 is acknowledged. The traversal is on the ground(s) that the subject matter of all claims 1-18 is sufficiently related that a thorough search for the subject matter of any one group of claims would necessarily encompass a search for the subject matter of the remaining claims. This is not found persuasive because a search conducted the summation of a predetermined number of similarities would in no way encompass a search for a mean square of a predetermined number of similarities.
2. The requirement is still deemed proper and is therefore made FINAL.
3. Claims 9 and 14 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected Species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 08 February 2008.
4. This application contains claims 1, 5, 9, 12, 14, 17 drawn to an invention nonelected with traverse in the reply filed on 04 September 2007 and 08 February 2008. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Response to Arguments

5. Applicant's argument that Hillhouse does not disclose "deletion means for deleting the fingerprint data having a general similarity that is highest among the pieces of fingerprint data registered in the fingerprint registration data section, from the fingerprint registration section,"

has been fully considered and is persuasive. However, upon further consideration, a new ground(s) of rejection is made in view of Hillhouse, U.S. Publication No. 2002/0154793, in view of Luke, U.S. Patent No. 7,130,867.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 11, 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. The claims require, "calculating the similarity between two of a predetermined pieces plus one of registered fingerprint data for all combinations of a selection of two pieces of data from the predetermined pieces plus one pieces of data," which renders the claims indefinite because it is unclear to what "predetermined pieces" refers. Therefore, it is unclear exactly what is being compared. For the purposes of examination the claims will be treated as comparing the similarities of various portions of the sample against the same portions of a registered sample.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claims 2-4, 6-8, 13, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hillhouse, U.S. Publication No. 2002/0154793, in view of Luke, U.S. Patent No. 7,130,867.

Referring to claims 2, 3, 6, 7, Hillhouse discloses a biometric authentication system wherein a user's fingerprint biometrics are initially enrolled for storage as a biometric template ([0053] & [0056]), which meets the limitation of a fingerprint registration data section in which pieces of fingerprint data are registered. Subsequently a user provides a fingerprint sample for authentication ([0059] & Figure 2), which meets the limitation of a fingerprint read section which reads one fingerprint data. The fingerprint sample is compared against the biometric samples associated with that user that are stored in a database ([0059]-[0060] & Figure 2), which meets the limitation of a fingerprint collation section which inspects whether fingerprint data that matches or almost matches to the fingerprint data read by the fingerprint read section is registered in the fingerprint registration data section. If the sample is a match, a determination is made as to the degree of closeness with which the sample matches, and if the sample is close enough to the other biometric templates, the sample is stored as a subsidiary template along with the other templates in association with the user in the database ([0061]-[0062] & Figure 2), which meets the limitation of a control section which registers the fingerprint data read by the

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fingerprint read section in the fingerprint registration data section additionally to the fingerprint data that is registered in the fingerprint registration data section and that matches or almost matches to the fingerprint data read by the fingerprint read section if the fingerprint data that matches or almost matches to the fingerprint data read by the fingerprint read section is registered in the fingerprint registration data section. Hillhouse does not disclose deleting highly related biometric templates. Luke discloses deleting duplicate data in a file system (Col. 2, line 62 – Col. 3, line 14), which meets the limitation of deletion means for deleting the data having a general similarity that is highest among the pieces of data registered in the data section, the deletion means deletes the data having the general similarity that is highest among the pieces of data in the data section, when a number of the data in the data section exceeds a predetermined number. It would have been obvious to one of ordinary skill in the art to delete duplicate biometric templates in order to reduce the physical storage space required as taught by Luke (Col. 2, line 62 – Col. 3, line 14).

Referring to claims 4, 8, Hillhouse discloses that a comparison metric is made between all stored templates ([0069]), which meets the limitation of general similarity calculation means for calculating similarities between each of the pieces of fingerprint data registered in the fingerprint registration data section and the fingerprint data other than the each fingerprint data, respectively, and for calculating the general similarity based on the similarities.

Referring to claims 13, 18, Hillhouse discloses that if the sample is a match, a determination is made as to the degree of closeness with which the sample matches, and if the sample is close enough to the other biometric templates, the sample is stored as a subsidiary template along with the other templates in association with the user in the database ([0061]-

[0062] & Figure 2), which meets the limitation of the control section registers the fingerprint data read by the fingerprint read section in the fingerprint registration data section additionally to the fingerprint data that is registered in the fingerprint registration data section and that matches or almost matches to the fingerprint data read by the fingerprint read section in accordance with seasonal variation on the fingerprint data.

12. Claims 10, 11, 15, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hillhouse, U.S. Publication No. 2002/0154793, in view of Luke, U.S. Patent No. 7,130,867, and further in view of Jiang, "Online Fingerprint Template Improvement". Referring to claims 10, 11, 15, 16, Hillhouse discloses a fingerprint sample is compared against the biometric samples associated with that user that are stored in a database ([0059]-[0060] & Figure 2). Hillhouse does not disclose that this comparison is made using the mean square algorithm to compare fingerprint sample similarities. Jiang discloses utilizing the mean square algorithm to compare similarities of fingerprint samples (Page 1121, Section 2, last paragraph), which meets the limitation of the general similarity is calculated based on a mean square of a predetermined number of similarities of each fingerprint, the predetermined number of similarities of each fingerprint data is determined by calculating the similarity between two of a predetermined pieces plus one of registered fingerprint data for all combinations of a selection of two pieces of data from the predetermined pieces plus one pieces of data. It would have been obvious to one of ordinary skill in the art at the time the invention was made for the comparisons in Hillhouse to be made using the mean square algorithm in order to reduce the computing intensity as taught by Jiang (Page 1121, Section 2, last paragraph).

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BENJAMIN E. LANIER whose telephone number is (571)272-3805. The examiner can normally be reached on M-Th 6:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on 571-272-3799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Benjamin E Lanier/
Primary Examiner, Art Unit 2132